Notebook, N-01-04-15

The only dated entry in this notebook is from April 1901. At the beginning of the book are notes by Edison regarding trials of various alloys for use in thermocouples. The metals tested include antimony, bismuth, cadmium, lead, tin, and zinc. Near the end of the book is a series of trials by an unidentified experimenter, possibly John Tronicke, of some of the combinations listed by Edison. The spine is stamped "152." The pages are unnumbered. Less than 20 pages have been used.

X E-172 N-01-04-15

April 15 1901

Experiments on alloys —
Combinations for thermoelectric
Batteries

99	parts Antimony	1 part Zinc
98	"	2 "
97	"	3 "
96	"	4
95	"	5
94		6
93		7
92		8
91		9
90		10
89		11
88		12
87		13
86		14
85		15
84		16
83		17
82		18
81		19
80		20
79		21
78		22
77		23
76		24
75		25
74		26
73		27

72 parts Antimony 28 parts Zinc

71	29
70	30
69	31
68	32
67	33
66	34
65	35
64	36
63	37
62	38
61	39
60	40
59	41
58	42
57	43
56	44
55	45
54	46
53	47
52	48
51	49
50	50
49	51
48	52
47	53
46	54

45 parts of antimony 55 parts of Zinc

44	56
43	57
42	58
41	59
40	60
39	61
38	62
37	63
36	64
35	65
34	66
33	67
32	68
31	69
30	70
29	71
28	72
27	73
26	74
25	75
24	76
23	77
22	78
21	79
20	80
19	81
18	82
17	83
16	84

95	5
90 parts antimony	10 Lead
85	15
80	20
75	25
70	30
65	35
60	40
55	45
50	50
45	55
40	60
35	65
30	70
25	75
20	80
15	85
10	90
5	95

15 parts antimony — 85 parts Zinc

14	86
13	87
12	88
11	89
10	90
9	91
8	92
7	93
6	94
5	95
4	96
3	97
2	98
1	99

The camp with antimony + Tin
" " " + Lead
" " " + Cadmium
" " " + Bismuth *
" " " + Copper
" " " + Sulphur
" " " + Amorphous phosphorus
" " " + Arsenic
" " " + Sodium

The same with Antimony & Ferromanganese
" " & Nickel
" " " Cobalt
" " " Aluminum
" " " Magnesium
" " " Tungsten
" " " Iron
" " " Sulphide lead
" " " Bismuth
" " " ~~Sulph~~ Copper
" " " Cobalt
" " " Nickel
" " " Iron
" " arsenical pyrites
" " & Phosphide of lead
" " " Tin
" " " Zinc
" " " ~~Antimony~~
" " " Bismuth
" " " Copper
" " " Nickel
" " " Cobalt
" " " Aluminum
" " " Magnesium
" " " Tungsten
" " " Molybdenum
" " " Iron
" " " Manganese

Could not get any more than ~~[illegible]~~ 6 gr. of 80 Sb + 20 Ni in 4 oz of Sn

Sn 40
Sb + Ni
80 20) 60

Cd Would not cake but burn above

Cd 70
Sb + Ni
80 20) 30

Bi Would not cake because the Alloy was too thick to flow above

Bi 50
Sb + Ni
80 20) 50

Could not get more than

Pb 70
Sb + Ni
80 20) 30

Could not get heat enough to melt the Sb + Ni Alloy

Sn
70 30

Tried Pb with double burner and melted it with Sb + Ni Alloy make it with half cake

Sn
Sb + Ni Alloy
70 30

Cd does not go good when I put the Sb+Ni Alloy in, the cad burns
70 30

Tried Zn, and could not get heat enough to melt Sb+Ni Alloy Zn
70 30
would burn ~~before~~ the Alloy would melt on 2.5 Zn +15 the Alloy

Tried Pb and could not get heat enough to melt the Alloy of Sb70+Ni 30

Tried Sn + could not get heat enough to melt the Alloy of Sb70 + Ni 30

Tried Bi + could not get heat enough to melt the Alloy of Sb70 + Ni30

Tried Bi + could not get heat enough to melt the Alloy Sb60 + Ni 40

Tried Sn + could not get heat enough to melt the Alloy Sb60 + Ni 40

Tried Pb + could not get heat enough to melt Alloy Sb 60 + Ni 40

Tried Zn + Cd could not get alloy to melt.
Sb60+Ni40

Tried Cd + and Alloy of Sb60+Ni40;
Cd would burn at a very low heat

Tried the Alloy Zn90Ni10 with all
different metals

Tried the Alloy Zn80Ni20 with all
different metals

Tried the Alloy Zn80Ni20 with all
different metals, There were two
patches of Alloy Zn80Ni20

Tried the Alloy Zn70Ni30 with all
different metals

Tried the Alloy Zn60Ni40 with all
different metals

Tried the Alloy Zn50Ni50 with all
different metals

Tried the alloy Zn90Cu10 with all metals
and worked with Sb

Tried the alloy Zn80Cu20 with all metals and would not melt

Tried the alloy Zn70Cu30 with all metals

Tried the alloy Zn60Cu40 with all metals

Tried the alloy Zn50Cu50 with all metals.

Tried the alloy Pb90Fe10 with all metals and got Bi in

Tried the alloy Pb80Fe20 with all metals and got Bi in

Tried the alloy Pb70Fe30 with all metals the alloy would not melt

Tried the alloy Pb60Fe40 with all metals the alloy would not melt

Tried the alloy Pb50Fe50 with all metals and the alloy would not melt

Tried the alloy Sn 90 Ni 10 with all metals and got Sb + Zn in.

Tried the alloy Sn 80 Ni 20 with all metals and got Sb + Zn in.

Tried the alloy Sn 70 Ni 30 with all metals and could not get any in

Tried the alloy Sn 60 Ni 40 with all metals and could not get any in

Tried the alloy Sn 50 Ni 50 with all metals and could not get any in.

Tried the alloy Sb 90 Ni 10 with all metals and got Zn in

Tried the alloy Sb 80 Fe 10 with all metals and got Zn in.

Tried the alloy Sb 70 Fe 30 with all metals and could not get any in.

Tried the alloy Sb 60 Fe 40 with all metals and could not get any in.

Fired the alloy Sb 50 Fe 50 with all Metals and could not get any in.

Fired the alloy Sn 90 Fe 10 with all Metals and got Bi + Zn in.

Fired the alloy Sn 80 Fe 20 with all Metals and got Zn in.

Fired the alloy Sn 70 Fe 30 with all Metals and got Zn in.

Fired the alloy Sn 5 Fe 50 with all Metals and could not get any in.

Could not make the Te + Zn from Zn 30 + Te 70, to Zn 95 + Te 5. the Te would burn on Zn 35 + Te 65.

Could not make the Te + Cd from Cd 20 Te 80 to Cd 95 Te 5. Te burns